DEQ's COMPREHENSIVE STRATEGY FOR STORMWATER SOURCE CONTROL IN PORTLAND HARBOR

DRAFT OUTLINE
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I. Introduction and Objectives

A. The goal of stormwater source control is to ensure that stormwater discharges that individually or collectively have the potential to recontaminate sediment or otherwise inhibit achieving the long-term remedial action objectives are identified and evaluated by the time EPA issues the Portland Harbor ROD and controlled on a schedule that ensures cleanup of the river can proceed without risk of significant recontamination.

B. This strategy describes how DEQ will prioritize and implement stormwater source control in Portland Harbor. It presents a comprehensive approach for addressing stormwater source control needs in Portland Harbor throughout the various phases of the Portland Harbor RI/FS and cleanup:
   1. Pre-Portland Harbor Risk Assessment
   2. Pre-Portland Harbor Record of Decision (ROD)
   3. Post-ROD and Remedial Design/Remedial Action (RD/RA) phase
   4. Oversight and Long Term Monitoring (ongoing)

C. The strategy incorporates an iterative, adaptive management approach; i.e., includes evaluation and feedback components to ensure that strategy will be revised as new information dictates. Revisions will likely take place periodically and at key stages in the Portland Harbor project, such as:
   - when modeling efforts produce information on the relative impact of stormwater in Portland Harbor
   - when PRGs are adopted
   - when final cleanup goals are adopted, and
   - at any stage of the process, when monitoring data indicates the strategy is not accomplishing its objectives

D. The strategy describes the tools and approaches DEQ uses to make stormwater source control determinations

E. Specifics on source control activities and evaluations at individual sites and outfalls will be presented in separate source control reports and decision documents and will be summarized in DEQ's periodic Milestone Reports.

II. Background

A. 2001 MOU assigns upland source control responsibilities to DEQ

B. JSCS lays out the overall process and expectations; Appendix D describes the process for evaluating and prioritizing sites

C. DEQ and City of Portland Bureau of Environmental Services (BES) signed an intergovernmental agreement in 2003 to work cooperatively to evaluate and control sources of discharges to the City's stormwater conveyance system that might adversely affect sediment and surface water quality in Portland Harbor

D. Stormwater source control will require a cross program approach within DEQ and between DEQ and BES to ensure control of both legacy and ongoing discharges that contribute recontamination risk to PH sediments

III. Achieving Source Control at Portland Harbor Sites Prior to the Risk Assessment

A. **Source Identification and Screening**

1. Investigation and identification of potential stormwater sources will occur on an ongoing, iterative basis
   a. Source Tracing and Identification efforts undertaken as part of BES's Outfall Remedial Investigation in a collaborative effort with DEQ
      - Basins prioritized based on sediment data and information on upland sites
      - Inline sampling and sediment traps are strategically deployed to help focus efforts and identify sources
        - Samples taken at mouths of subbasins used to prioritize among subbasins within an outfall basin
        - Samples taken above and below suspected sources help determine the presence and significance of a source
      - Data evaluated to identify potentially significant sources, as well as add to body of evidence suggesting a site/area is not a significant source
      - Information on potentially significant sources provided to DEQ

   b. DEQ conducts Site Discovery investigations both within and outside of City outfall basins and other multi-party outfalls (e.g., various Port outfalls, Schnitzer-Burgard site outfall). Several data sources are considered to identify sites:
      - Results of BES source identification efforts
      - LWG RI data
      - File reviews of inactive and closed ECSI sites
      - Stormwater permit monitoring data and site inspection records
      - First-hand observations

2. DEQ evaluates the information to determine what kind of follow up, if any, is necessary using the following considerations
   a. Weight of evidence determination involves several factors, including but not limited to:
      - evidence of releases at the site, and their nature and magnitude
      - comparison of site COIs to Portland Harbor COIs
      - presence and concentration of bioaccumulative COIs
      - discharge location (e.g., in or near an AOPC that has COIs in common with site COIs)
      - runoff volume
      - hydrodynamics of receiving water
      - current activities and stormwater management practices on the site
      - NPDES stormwater monitoring data and inspection reports

- exceedances of AWQCs in receiving water (i.e., 303(d) listing)
- other pertinent data from outfall basin (LWG stormwater data; inline sediment data; etc.)

b. If sufficient evidence exists that contamination at a site could be a significant source of contamination to the river, the site will be asked to undertake a stormwater evaluation under DEQ oversight.
c. If there is evidence that a site could be a source of contamination to the river but it's unclear whether the site warrants joining the DEQ CU program, DEQ will either go onsite to collect representative catch basin samples or ask the site to collect sample under DEQ or BES supervision. Samples will be analyzed for metals, PCBs, PAHs, phthalates and pesticides.
   - If data show significantly elevated levels of COIs and additional site information and outfall sediment data link this site to sediment contamination at the end of the outfall, DEQ will ask the site to conduct a stormwater evaluation under DEQ CU program oversight
   - If data show elevated levels of COIs but there is no evidence to suggest this is a result of legacy contamination or a likely source of COIs found in high concentrations at the end of the outfall, DEQ will take one of two actions:
     - If the source of contaminants is uncertain and./or the contaminants with elevated concentrations are PBTs, DEQ will ask the site to evaluate stormwater management practices under BES or DEQ oversight and resample after source control measures have been implemented. DEQ will review the data to determine the next step, which could include:
       - bringing the site into the program to conduct a stormwater evaluation,
       - requiring additional source control measures, or
       - determining that the stormwater at the site is being adequately controlled.
     - If data show only relatively low level exceedances of non-bioaccumulative COIs, DEQ will recommend that the RP work with BES or DEQ stormwater staff to evaluate and improve stormwater management practices as appropriate
d. Under any of these scenarios, DEQ staff will be available to provide technical assistance on hazardous waste management requirements and ways to eliminate or reduce use of hazardous substances

B. **Selecting and Implementing Source Control Measures**

1. Source control measures are selected based upon the need to achieve the following two objectives:
   a. eliminate or control sources of legacy contamination that are releasing contaminants to stormwater
   b. prevent or minimize releases of hazardous substances from ongoing potential sources
2. Specific measures needed will be unique to each site, based upon a variety of site specific factors (e.g., proximity of the source to stormwater conveyances and likelihood that contaminants will be washed into the conveyance; magnitude of risk associated with specific COIs; etc.)
   a. common measures include catch basin and line cleanouts and stormwater BMPs
   b. removals or other more aggressive source control actions may be necessary at some sites
3. BES and DEQ technical assistance and site inspections help identify and address source control needs at low priority sites
4. As for outfall basins, the focus at this stage is identifying sources and achieving source control at sites within the basin.

C. **Evaluation of Source Control Measures**

1. Sites will be asked to conduct performance monitoring after source control measures have been implemented. Performance monitoring data are used to determine:
   a. Whether source control measures have been effective in reducing contaminant concentrations
   b. If there are continuing exceedances of SLVs
2. Depending upon the outcome of performance monitoring, DEQ may determine that:
   a. Source control as been achieved,
   b. Additional site investigation, source control measures, and/or data collection is needed, or
   c. In spite of SLV exceedances, source control objectives have been achieved at this site provided that the following three criteria are met:
      - legacy contamination has been controlled to the extent feasible,
      - exceedances are not significantly higher than concentrations at comparable sites where source control has been achieved, and
      - there are no other indications that stormwater discharges would likely contaminate sediments or surface water
3. Loading data may be necessary where adequacy of source control cannot be determined. At this stage in the CERCLA process, one approach for evaluating loading data would be to use land use loading rate estimates derived from LWG data to provide insight into what concentrations we would "expect" to see from a particular site. Sites that have considerable exceedances of the "expected" concentrations would be presumed to need additional source control.
4. For sites discharging into shared conveyances, "end of the outfall" data may be used to corroborate the determination that sources within that basin have been identified and adequately controlled for this stage of the process. The presence of significantly elevated concentrations of COIs in outfall data may hold up source control decisions at sites within that basin until the source of contamination can be determined.

D. **Issuing a Source Control Decision**

1. If there are no exceedances of SLVs, the site is considered to be controlled
2. If exceedances remain after all reasonable and prudent source control measures have been implemented, the following criteria can be considered as part of a weight of evidence determination as to whether additional source control measures or a conditional source control decision may be needed
   a. Have all known and suspected sources of legacy contamination been controlled to the extent feasible?
   b. Are exceedances not dissimilar from data from comparable sites?
   c. Is the site covered under a NPDES stormwater permit?
   d. Are additional conditions or covenants necessary to assure no future releases?
3. Source control decisions will be documented and shared with EPA as described in the JSCS

IV. Adaptive Management Plan [see Figure 2]

A. In an iterative fashion, DEQ will evaluate the comprehensive stormwater strategy and the JSCS relative to information that comes available through the Portland Harbor RI/FS and will determine whether additional source control measures and/or a change to the strategy may be needed. Potential outcomes may include but are not limited to the following:

1. Development of a Portland Harbor industrial stormwater general permit that accomplishes one or more of the following: covers more sources than 1200Z; requires implementation of specific BMPs, includes monitoring requirements tailored to Portland Harbor needs
2. Requirement for specific sites to obtain an individual permit for their stormwater discharges.
3. Need to obtain a more robust stormwater loading data set for sites/outfalls that discharge into or adjacent to a sediment management area; DEQ will work with sites to collect data as necessary
4. Changes to Portland's municipal stormwater permit (MS4 permit) and related programs

B. At the RD/RA stage, it may be necessary to conduct more in-depth, site specific stormwater loading evaluations and/or require additional source control measures to support remedial action objectives

V. Long Term Monitoring and Oversight

A. DEQ will establish a long term monitoring plan that evaluates the effectiveness of stormwater control measures relative to the objectives of this strategy

B. DEQ will ensure that adequate regulatory and administrative measures are in place to provide long term oversight and respond to recontamination issues if they arise. These include but are not limited to the following:
   1. BES programs and resources
      a. Industrial stormwater permits/program
      b. MS4 stormwater permit/program
      c. Related programs as coordinated under BES's Watershed Management Plan
   2. DEQ programs and resources
      a. Cleanup program
      b. Water Quality program
      c. Technical Assistance

Figure 1: Decision-making at Stormwater Sites

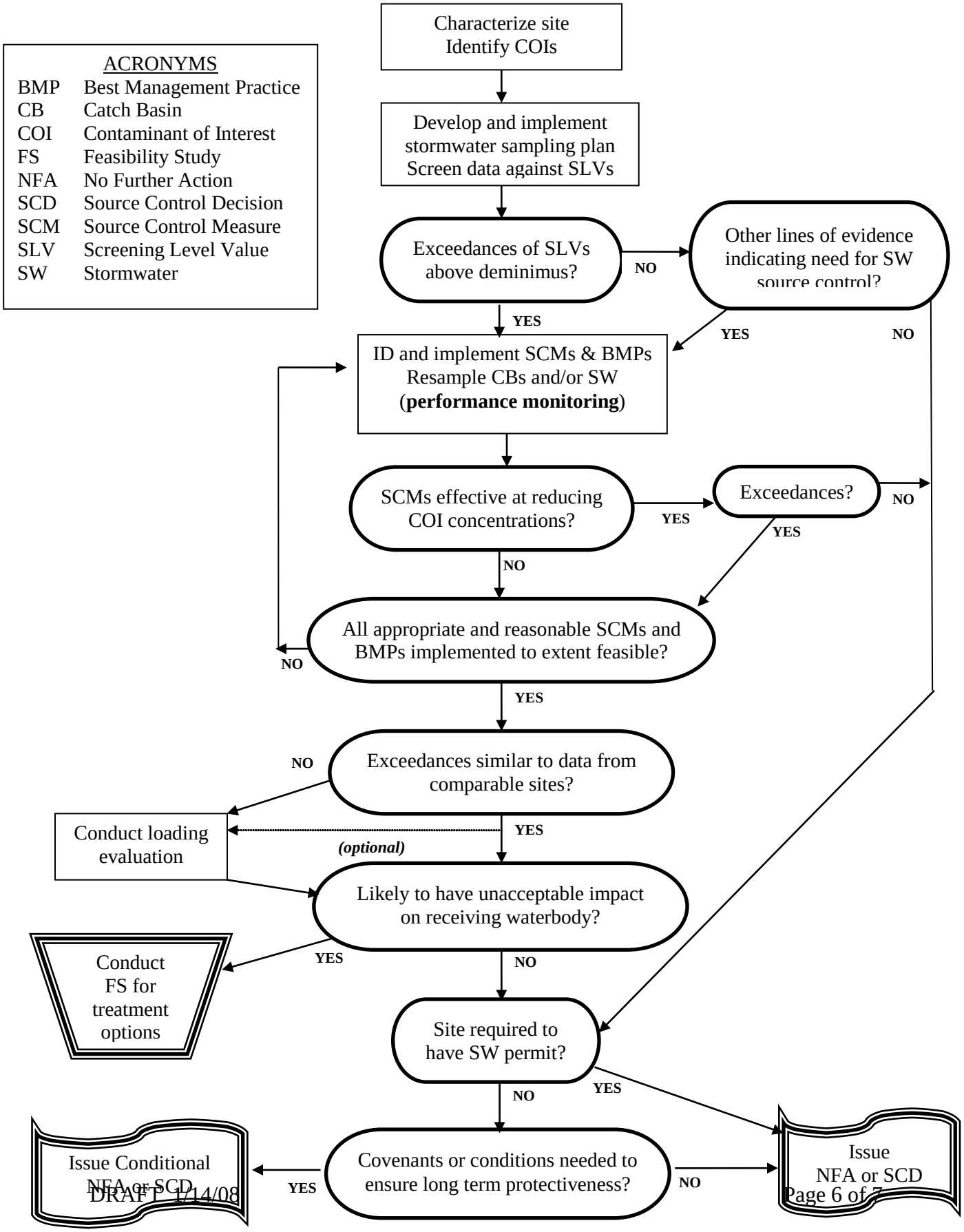

Figure 2: Evaluation and Feedback Loops for Stormwater Source Control Strategy